



# Lean+ “Tying it all Together”

Jan Martinson  
Director, IDS Lean+  
February 2008

# Agenda

NASA Project Management Conference | February 2008

- Establishing the Vision
- Defining the approach
- Keys to successful deployment
- Examples
- Summary

# Setting the vision

## A Vision that rallies collective action

NASA Project Management Conference | February 2008

Lean is ... a desired state characterized by:

- Efficient use of assets
- High inventory turns
- Continuous flow
- Excellent supplier management
- Short cycle times
- First-time Quality
- Low transaction costs
- Engaged people

[www.boeing.com/vision](http://www.boeing.com/vision)

### Vision 2016

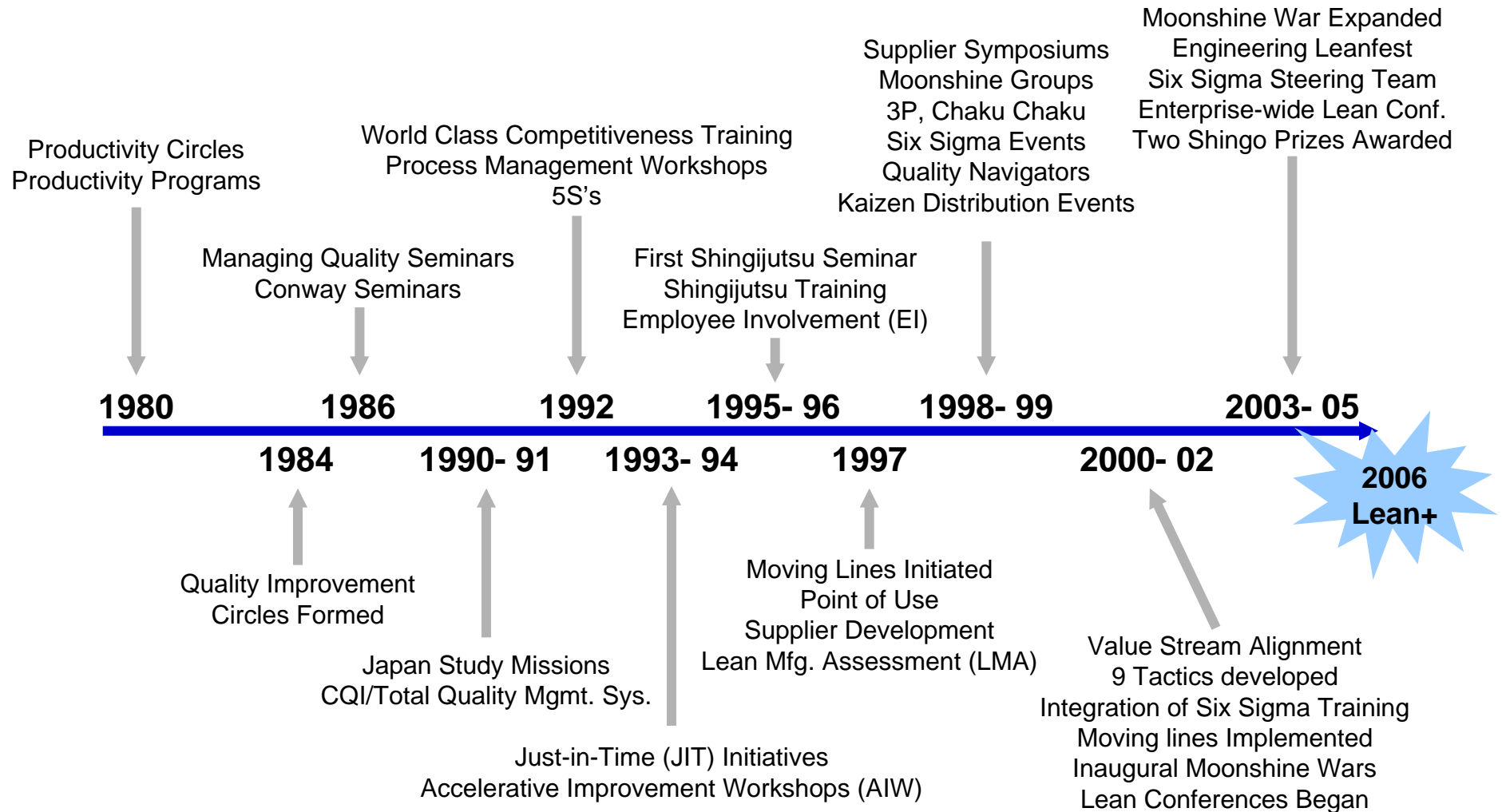
People working together as a global enterprise for aerospace leadership



Strategies	Core competencies	Values
Run healthy core businesses	Detailed customer knowledge and focus	Leadership
Leverage strengths into new products and services	Large-scale systems integration	Integrity
Open new frontiers	Lean enterprise	Quality
		Customer satisfaction
		People working together
		A diverse and involved team
		Good corporate citizenship
		Enhancing shareholder value

# Continuous improvement journey

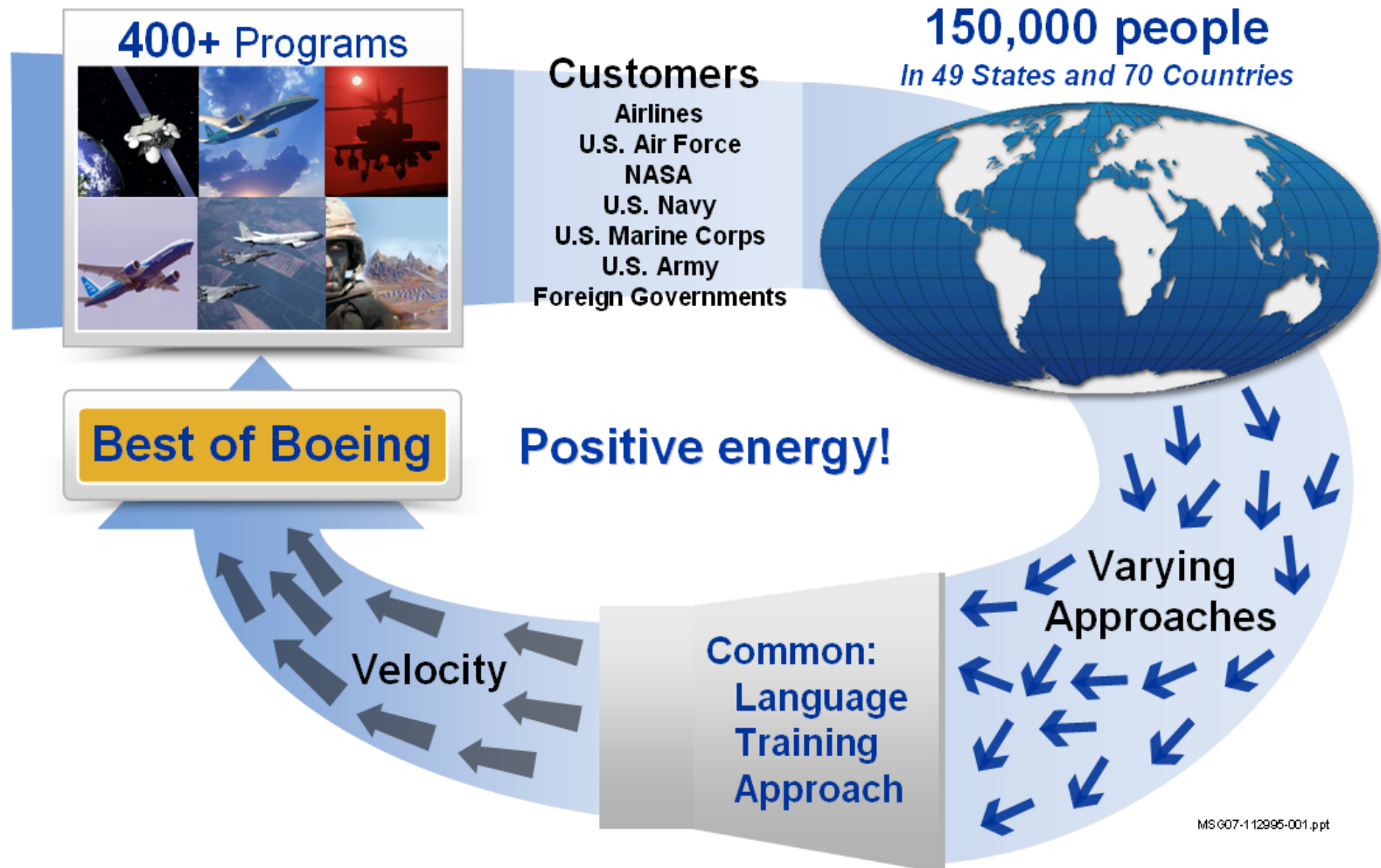
NASA Project Management Conference | February 2008



# Lean+ Tying it all Together

## Bringing the best of Boeing ... to Boeing

NASA Project Management Conference | February 2008



# The Lean+ Mission at Boeing:

NASA Project Management Conference | February 2008



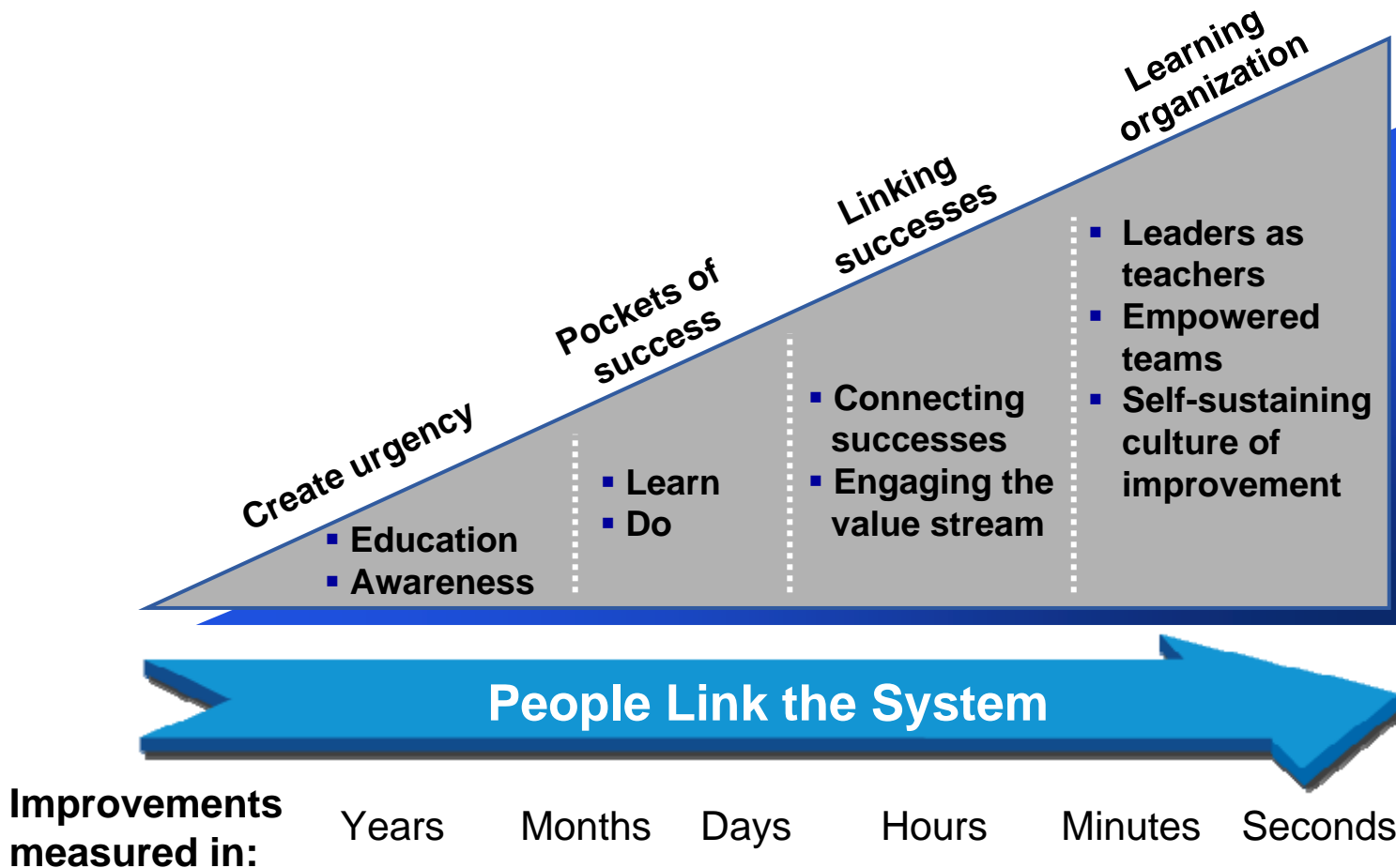
**Lean+ enables an environment and culture focused on achieving world-class levels of customer satisfaction, productivity and long-term growth, through the systematic prevention and elimination of waste and sustained continuous improvement driven by:**

- One Boeing approach
- A common language
- Consolidated and aligned tools / principles
- Consolidated and standardized training
- Sharing, learning, and replication
- Value stream focus: customers and supplier-partners
- Leaders as teachers
- Engaging our employees

***The ONE overarching continuous improvement approach***

# Lean+ Cultural Evolution

NASA Project Management Conference | February 2008





# Do the basics!

## Understanding what Customers value ...

NASA Project Management Conference | February 2008



***Identify Your Customers & Stakeholders***



# Do the Basics!

NASA Project Management Conference | February 2008



***Identify Products / Services***

# Map the “Value Stream”, define success and measure performance

NASA Project Management Conference | February 2008



***Understand the Flow  
& Focus Action***



***Clarify Needs & Set Goals***



***Metrics***

# Eliminate waste and deliver value

## First time quality ... saves money

NASA Project Management Conference | February 2008



***Make Work Flow***



***Reduce System Complexity***



***High Performance Environment***



***Reuse Knowledge & Products***

# Lean Success Stories



# Design/Procure/Build/Certify/Deliver 737 Program

NASA Project Management Conference | February 2008



## 737 Lean Progress

- 50% Final Assembly cycle time reduction
- 55% cost of quality reduction
- 63% reduction in hazardous waste



# Support Material Management Response Cell

NASA Project Management Conference | February 2008



## CAS Lean Progress

- Goal of reducing response time to 4 hours
- 30% of requirements currently resolved in 30 minutes
- Handles more than 6,000 customer requests per week



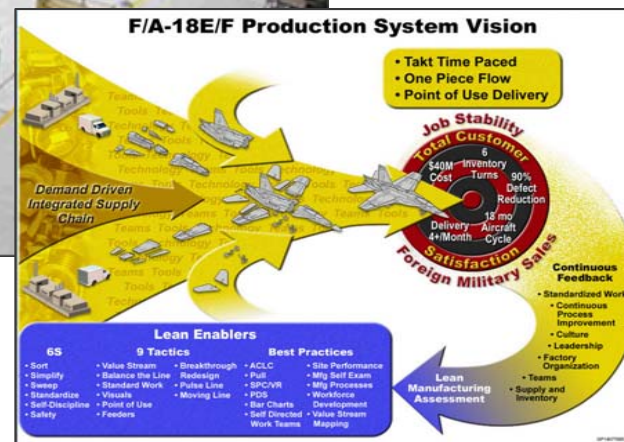


# Super Hornet Production Transformation

NASA Project Management Conference | February 2008



- 90%+ Defect reduction
- 55% Cycle reduction
- 20% Reduction in footprint
- Pulse / Moving line
- Paperless factory

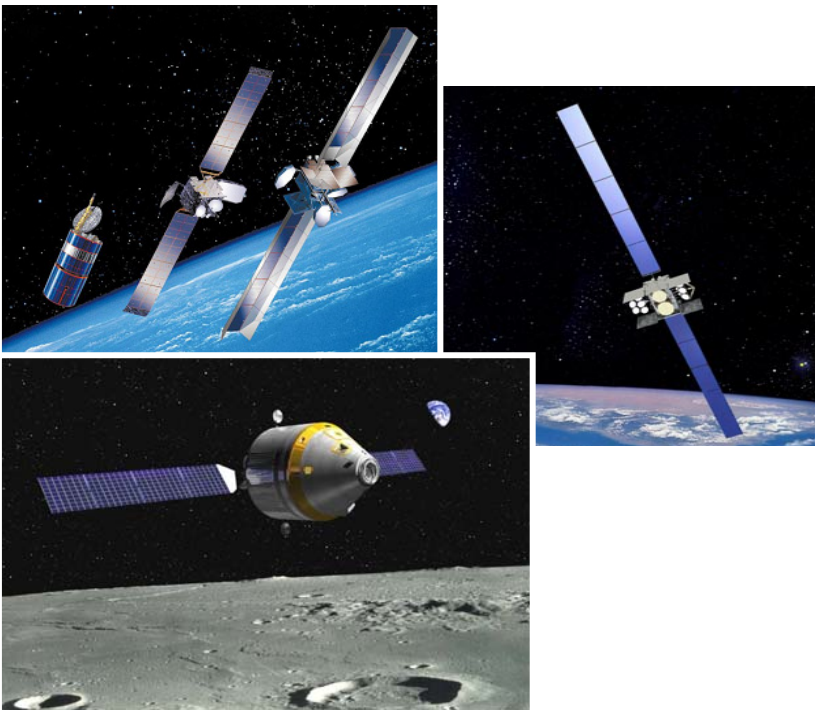


*Our people shaping the future*



# Satellite and Information Systems Lean Journey

NASA Project Management Conference | February 2008



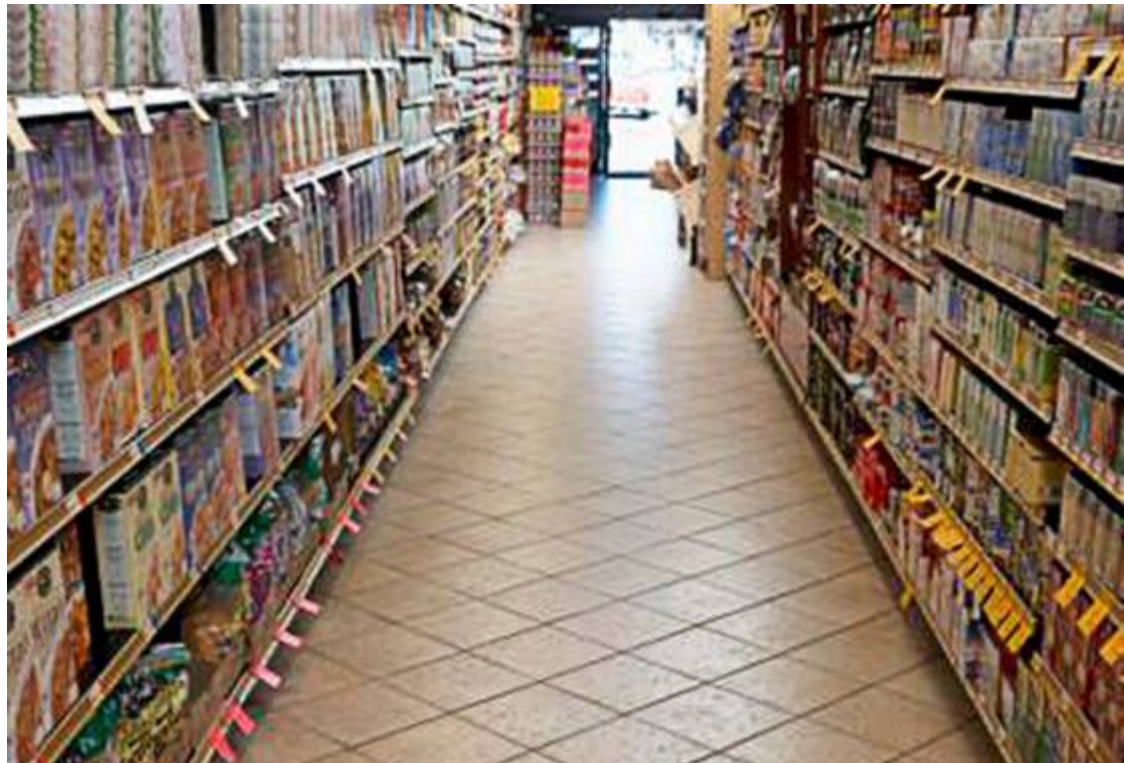
- **Many talented teams applied Lean+ to improve quality and productivity**
- **Improved quality & mitigated technical risk**
  - Open qualifications reduced 100%
  - Unit return rate reduced 97%
  - Cost of rework, repair, scrap reduced 73%
- **Increased throughput**
  - On-time engineering improved to 93%
  - Electronic unit on-time delivery 97%
- **Delivered results**
  - Electronic unit cost performance index 0.98
  - Consistently profitable

***Top-down Lean implementation led to business results***

# 2006 Supply Catalog Reduction

NASA Project Management Conference | February 2008

- Reduced 39,000 items from the catalog
- Equal to 30 mini-marts
- Year-over-year cost savings of 15%



# Ares I Proposal

## “Taking Lean to the Next Level”

NASA Project Management Conference | February 2008



Building upon the same Lean expertise that transformed the production lines of the 737, F/A-18E/F, and the Delta IV -- reducing costs, shortening lead times and increasing flexibility.

All to take human space systems where they've never been before.

# Summary

Continuous quality/productivity improvement is everyone's job

NASA Project Management Conference | February 2008

## EVERYONE ...

- Produces products or services
- Measures performance for what they produce
- Works to standardize, simplify their processes
- Removes non value added processes or steps that cause waste.
- Uses improvement techniques, making waste visible and then eliminate
- Empowers employees to improve how their products and services.
- Leaders need to set expectations ... Define it, Measure it, & Reward it.

***Lean+ EVERYBODY is in ... and ALIGNED***

